

For the Northern Territories: Col. H. P. Northcott's "Report on the Northern Territories of the Gold Coast", published by the Intelligence Division of the War Office (London, 1899).

The last-named work contains brief series of observations, for parts of 1898, at Gambaga, Yabum, Bona, Wa, and Kintampo; also, for part of January, 1899, at Wa.

#### WEATHER BUREAU MEN AS EDUCATORS.

Mr. W. M. Wilson, Section Director, Ithaca, N. Y., informs us that he gave the usual course of instruction in meteorology and climatology during the latter half of the college year to a class of 23 students. Waldo's Elementary Meteorology and Hann's Climatology were used as text-books. As one of the regular courses of the college of agriculture of Cornell University, it consisted of three lectures each week (one hour each), with laboratory work in drawing weather maps, climatic charts, etc., and taking and recording weather observations. Practise forecasts were made during the latter part of the course from weather maps and from local observations.

The course was considered quite successful altho by no means satisfactory. The facilities for teaching meteorology are at present decidedly poor, but when the new agricultural building is completed, about July, 1907, a suitable laboratory and lecture room with lantern will be provided. There is considerable interest manifested in the subject, and it is stated by Professor Tarr, who has heretofore given a short course in meteorology in connection with the subject of physical geography, that he will withdraw this course for the coming year and advise students desiring instruction in meteorology to take the course offered by the college of agriculture. This action on his part should increase the class and stimulate the interest.

The collection of slides, charts, etc., for illustrative purposes is well under way and it is hoped to make the course in meteorology at Cornell for the coming year worthy of the institution with which it is connected.

Mr. Joseph L. Cline, Observer, Corpus Christi, Tex., reports that the Corpus Christi Board of School Directors and School Superintendent have requested him to deliver one lecture a week on meteorological and kindred subjects to the seniors and subseniors of the local high school during the scholastic year 1906-7; Mr. Cline has given such lectures during the past two years.

Mr. M. L. Fuller, Observer, Canton, N. Y., writes in regard to the elective course in meteorology conducted by him, now given for the first time in the first semester of the college year now opening at St. Lawrence University. As the electives for the first semester are chosen in the preceding spring, which in this case was before the students could know that meteorology would be offered, the difficulty of changing plans has doubtless operated to reduce the size of the class this year.

The announcement in the university catalog relative to the course is as follows:

*Geology 7.—Meteorology.—I. Monday, Wednesday, and Friday, at 3 p. m.*

This course emphasizes the practical aspects of the subject rather than the technical. The atmosphere is of prime importance in the economics of earth. It has performed a large share in the preparation of the soil; it has directly or indirectly determined to a great extent the growth, development, and distribution of vegetation, animal life, and man; it exerts an important influence upon the occupations, the energy, the prosperity, and enlightenment of peoples.

The movements of the atmosphere thru which it contributes to these results, and the laws governing the movements, were long unknown, but are now in a measure understood, and are being observed and studied thruout the world. The civilized nations are annually expending several million dollars in applying present weather knowledge for the benefit of commerce and the productive industries.

This modern science of meteorology is now offered as an elective in

the junior and senior years. The course will cover the ground treated in Davis's elementary text and will include such general topics as—

The atmosphere: temperature, pressure, general circulation.

The moisture of the atmosphere: dew, frost, fog, clouds, rainfall.

General storms: hurricanes, cyclonic storms of temperate latitudes.

Local storms: thunderstorms, hailstorms, tornadoes.

The work of the United States Weather Bureau.

Weather forecasting: principles and practise.

The care and management of meteorological apparatus.

Frost: its formation, prediction, protection from.

Clouds: classification, movements, value in forecasting locally.

The practical application of meteorological knowledge.

The text will be supplemented by lectures, collateral reading, and laboratory work.

The laboratory work will include: the use of meteorological instruments; a series of individual weather observations; the construction of charts, diagrams, weather maps, etc.; weather forecasting.

The following lectures and addresses by Weather Bureau men are reported:

Mr. W. S. Belden of the Vicksburg, Miss., office, while on leave, August 22, 1906, before the Brown County Teachers' Institute, at Hiawatha, Kans., on "The Work of the Weather Bureau".

Mr. M. L. Fuller, of the Canton, N. Y., office, July 18 and 19, 1906, at the Iowa State Normal Summer School, Cedar Falls, Iowa, a special address to the physical geography classes; also two evening lectures, upon "The Weather of the United States and of Iowa" and "The Work of the Weather Bureau; Local Storms"; also July 23 and 24, at the Webster County Teachers' Institute, Fort Dodge, Iowa, the same two lectures.

Mr. H. W. Richardson, September 22, 1906, before the public school teachers and principals of Duluth, Minn., on "The Weather Bureau".

Mr. M. R. Sanford, August 1, 1906, before the professors and students of the Syracuse University Summer School, on "Weather Observations, Charts, and Forecasts".

Mr. J. Warren Smith of the Columbus, Ohio, office, August 22 and 23, 1906, before the Lake County Teachers' Institute at Painesville, Ohio, two lectures on "The Science of the Weather" and "The Daily Atmospheric Survey"; also August 28 and 29, at Cleveland, before the Cuyahoga County Teachers' Institute, the same lectures; also August 24, at Chardon, Ohio, before the Geauga County Teachers' Institute, the second of the lectures.

Mr. P. H. Smyth, September 3, 1906, before the Alexander County Teachers' Institute, at the Cairo, Ill., High School Building, on "U. S. Weather Bureau Forecasts and Warnings".

Mr. Edward L. Wells, August 9, 1906, before the Summer School and Teachers' Institute, at Boise, Idaho, on "Weather Forecasting".

We are glad to say that in some of these cases a slight compensation or honorarium has been granted to our men for their services, and we hope that in many other cases this action will be followed. Weather Bureau employees are paid only for their exacting official services; the extra labor involved in lecturing and teaching, and the special preparation incident thereto, is not imposed upon them as an official duty. Every employee may be relied upon to do what he can to promote the teaching and study of meteorology.—EDITOR.

#### EDUCATIONAL NOTES.

Prof. Willis I. Milham, of Williams College, Williamstown, Mass., has just published in pamphlet form a syllabus of his course in meteorology. He informs us that after using the syllabus a few years he "may begin to write it up as a textbook".

In the preface to the syllabus it is explained:

This syllabus is intended primarily for the students of Williams College where meteorology is given as a 3-hour elective course for juniors and

seniors during the first half-year. A text-book is used as the basis of instruction but much supplementary material is added in the form of lectures. In order to systematize the work this syllabus, which covers both text-book and lectures, was prepared.

The title is: "Syllabus of a Course on Meteorology", and meteorology is here considered in its broadest sense as the science which deals with all atmospheric phenomena. Some things are thus included which may not be found in all books on meteorology. The subject is divided into 13 chapters, of which the first eight are always treated in every book on meteorology. The last five are treated fully in some books and past over with a few words in others. The chapters are subdivided into sections and the sections into topics. References are given in the syllabus to the four following books: Davis, *Elementary Meteorology*; Moore, *Meteorology*; Russell, *Meteorology*; and Waldo, *Elementary Meteorology*. \* \* \* No attempt has been made to give references to all the books on meteorology. The reasons for choosing these particular four were: (1) They seem to be the most complete modern text-books. (2) As far as is known to the author, whenever a separate text-book on meteorology is used in any school or college of the United States, one of these four is always chosen.

About forty-five periods are available for the course as given in Williams College, and this time suffices for covering the first eight chapters in detail, and for several lectures on the more important topics in the last five chapters. Davis's book is used at present as the text-book. Practical work in making observations, in deriving generalizations from meteorological statistics, and in making forecasts is required in connection with the course. Short essays or theses on special topics are also sometimes required.

The detailed outline of sections and topics of the first eight chapters was printed in the MONTHLY WEATHER REVIEW, July and April, 1905, Vol. XXXIII, pp. 324 and 159. The revisions since that printing have been very slight, and the most noticeable change is the addition of references to three other texts.

The titles of the chapters are as follows:

- I. Introduction—the atmosphere.
- II. The heating and cooling of the atmosphere.
- III. The observation and distribution of temperature.
- IV. The pressure and circulation of the atmosphere.
- V. The moisture of the atmosphere.
- VI. The secondary circulation of the atmosphere.
- VII. Weather bureaus and their work.
- VIII. Weather prediction.
- IX. Climate.
- X. Floods and river stages.
- XI. Atmospheric electricity.
- XII. Atmospheric optics.
- XIII. Atmospheric acoustics.

We are informed by Prof. Charles S. Dolley, of the Department of Biology, Central High School, Philadelphia, Pa., that there is at that school "an opportunity for a competent young man to secure a very desirable position as instructor in physical geography, commercial geography, and the natural history of raw materials".

#### POPULAR METEOROLOGICAL LECTURES IN ENGLAND.

According to Nature, July 19, a series of popular lectures on meteorology has been given, during the past year, by Mr. W. Marriott, Assistant Secretary of the Royal Meteorological Society, under the auspices of the society itself. The lectures have been given before scientific societies, institutions, and schools; and a list of lectures for the coming season can be obtained by application to Mr. Marriott, at the rooms of the society, No. 70 Victoria street, London, S. W.

The eight lectures to be delivered during the season of 1906-7 will be illustrated with lantern slides. Their titles are as follows:

1. A chat about the weather.
2. Weather forecasting.
3. Rain, snow, hail, and thunderstorms.
4. The upper regions of the atmosphere.
5. Clouds, fog, and sunshine.
6. Climate and health.
7. Meteorology in relation to agriculture.
8. How to observe the weather.

It is so common for American universities to call distin-

guished Europeans to this country for short courses of lectures on special subjects that we earnestly hope some such institution, or the Chautauqua, will soon invite Mr. Marriott to deliver a course appropriate to an American audience. The popular lectures given in England can doubtless easily be supplemented by technical lectures on a subject with which Mr. Marriott is so familiar. It is always valuable to students to hear a subject treated by different men from different standpoints, and the courses of instruction in meteorology that are given at Harvard, Williams, Amherst, Chicago, and elsewhere would doubtless receive new interest if the students could also listen to Mr. Marriott.

Mr. Marriott has also published a little six-penny pamphlet, entitled "Some Facts About the Weather". From the last section of this pamphlet we learn that all who are interested in the progress of meteorology, ladies as well as gentlemen, are eligible for fellowship in the Royal Meteorological Society. Candidates must be personally known to at least one of the three fellows who recommend them for election. The annual dues are two pounds sterling, or ten dollars, with an entrance fee of five dollars or one pound sterling. Fellows receive the Quarterly Journal and other publications of the society without further payment.

The Editor will be pleased to join in recommending those who desire to join either the Royal Meteorological, the French Meteorological, the Austrian, or the German societies. The publications issued by them are full equivalents for the annual dues.

#### RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

H. H. KIMBALL, Librarian.

The following titles have been selected from among the books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be loaned for a limited time to officials and employees who make application for them.

##### Agra and Oudh. Meteorological Reporter.

- Annual statement of rainfall, 1905. [Allahabad.] [1906.] (13 pp.) f°. Administration report, 1905-6. Allahabad, 1906. (4 pp.) f°. Brief sketch of the meteorology of the United Provinces...1905. Allahabad, 1906. (7 pp.) f°.

##### Austria. K. k. Hydrographisches Central-bureau.

- Jahrbuch 1903. Wien, 1905. v. p. f°.

##### Batavia. Kon. Magnetisch en Meteorologisch Observatorium.

- Observations made at the Royal Magnetic and Meteorological Observatory, 1904. Batavia, 1906. xxxiv, 174 pp. f°.

##### Besançon. Université. Observatoire.

- 17<sup>me</sup> bulletin météorologique. 1901. Besançon. n. d. v. p. 4°. 18<sup>me</sup> bulletin météorologique. 1902. Besançon. n. d. v. p. 4°.

##### Bibliotheca Geographica.

1902. Berlin, 1905. xvi, 531 pp. 8°.

##### Buitenzorg. Institut Botanique.

- Observations météorologiques 1903-4. n. t. p. n. d. f°.

##### Cape of Good Hope. Meteorological Commission.

- Report. 1901. Cape Town, 1902. xvi, 185 pp. f°. Same. 1902. Cape Town, 1903. xv, 177 pp. f°. Same. 1903. Cape Town, 1904. xiv, 197 pp. f°. Same. 1904. Cape Town, [1905] 27; xv, 119 pp. f°.

##### Caspari, O[hretien] Ed[ouard].

- Les recherches scientifiques à la Tour Eiffel. (Extr. Bull. Soc. astro., Par. Juillet 1906.) Paris, 1906. 9 pp. 8°.

##### Denmark. Danske Meteorologiske Institut.

- Meteorologisk Aarbog for 1903. Kjobenhavn, 1904-5. v. p. f°. Same. 1904. Pt. 1. Kjobenhavn, 1905. 143 pp. f°. Same. 1905. Pt. 1. Kjobenhavn, 1906. 143 pp. f°.

##### Eiffel, G[ustave].

- Les observations météorologiques du Weather Bureau de Washington. (Extr. Bull. Soc. astro., Par. Année 1906.) Paris, 1906. 27 pp. 8°.

- Types généraux de comparaisons météorologiques appliqués à l'étude des stations de Beaulieu-sur-mer, Sèvres et Vacquey. 1905. Paris, 1905. 71 pp. f°.

##### Finska Vetenskaps-societeten. Helsingfors.

- Bidrag till kännedom af Finlands natur och folk. 61 Häftet. Helsingfors, 1902. xxi, 303 pp. 8°. Same. 62 Häftet. Helsingfors, 1903. 431 pp. 8°.